

WR-35
Rev (1-10)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 09/01/2010
API #: 47-7700501

Farm name: Glisan Unit

Operator Well No.: 8012

RECEIVED

LOCATION: Elevation: 2305'

Quadrangle: Brandonville 7.5'

SEP 09 2010

District: Grant

County: Preston

Latitude: 39.71971 (NAD 27) Feet South of _____ Deg. _____ Min. _____ Sec.

Longitude 79.59272 (NAD 27) Feet West of _____ Deg. _____ Min. _____ Sec.

WV Oil and Gas
Conservation Commission

Company:

Address:	Casing & Tubing	Used in drilling	Feet in well	Cement fill up Cu. Ft.
4 Grandview Circle, Suite 203	20"	30'	30'	Circ to Surface
Canonsburg, PA 15317	13 3/8"	523'	523'	475 cu ft (395 sx)
Agent: <u>Shawna C. Yezak</u>				Circ to Surface
Inspector: <u>Bryan Harris</u>	9 5/8"	1240'	1240'	493 cu ft (345 sx)
Date Permit Issued: <u>05/29/2009</u>				Circ to Surface
Date Well Work Commenced: <u>12/2/2009</u>	5 1/2"	8351'	8351'	640 cu ft (500 sx)
Date Well Work Completed: <u>06/10/2010</u>	2 3/8"		8123'	
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): <u>8,371'</u>				
Total Measured Depth (ft):				
Fresh Water Depth (ft.): <u>350-390'</u>				
Salt Water Depth (ft.): <u>1700'</u>				
Is coal being mined in area (N/Y)? <u>Y</u>				
Coal Depths (ft.): <u>605</u>				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Upper and Lower Marcellus Pay zone depth (ft) 8145

Gas: Initial open flow 350,000 MCF/d Oil: Initial open flow 0 Bbl/d

Final open flow 90,000 MCF/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 648 Hours

Static rock Pressure 4300 psig (surface pressure) after 0 Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Shawna C. Yezak
Signature

09/01/2010
Date

- (124)-873-8814

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

04/7/2010-Shot Perforation in Lower Marcellus f/8128-8219'

04/08/2010 - Pumped FET within interval 8218-8219 with 1,167 gallons of fresh water

04/13/2010 - Shot Perforation in Upper Marcellus f/8158-8159'

04/19/2010 - Pumped FET within interval 8158-8159 with 974.4 gallons of fresh water

4/30/2010 - Stage 1 Frac within intervals of 8195-8215'

Total: 1000 gal 7.5% HCl Acid;2000 gal 15%HCl Acid; 370,015 gal water;149,500 lbs Mesh;169,400 lbs 40/70 Sand

5/5/2010 - Stage 2 Frac within intervals of 8145-8165'

Total: 1000 gals 15% HCl Acid; 500 gal 28% HCl Acid; 496,077 gals water;199,500 lbs 100 Mesh;299,700 lbs of 40/70 Sand

<u>Formations Encountered:</u>	<u>Top Depth</u>	<u>Bottom Depth</u>
<u>Surface:</u>		
Allegheny Formation Sandstone & Shale	0	273
Pottsville Sandstone	273	605
Coal	605	610
Mauch Chunk Sandstone & Shale	610	737
Greenbriar Sandstone	737	795
Little Lime - Limestone	795	878
Big Lime - Limestone	878	934
Big Injun - Sandstone	934	1258
Weir Sandstone	1258	2064
Sunbury Shale	2064	2067
Berea Sandstone	2067	2230
4th Sandstone	2230	2296
5th Sandstone	2296	2384
Bayard Sandstone	2384	2570
Elizabeth Sandstone	2570	2662
Warren Shale	2662	2844
Speechley Sandstone & Shale	2844	3004
Balltown Sandstone	3004	3286
Bradford Sandstone	3286	3412
Riley Sandstone & Siltstone	3412	3765
Benson Sandstone	3765	3995
Sandstone & Siltstone	3995	5035
Elk Sandstone	5035	5147

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

04/7/2010-Shot Perforation in Lower Marcellus f/8128-8219'

04/08/2010 - Pumped FET within interval 8218-8219 with 1,167 gallons of fresh water

04/13/2010 - Shot Perforation in Upper Marcellus f/8158-8159'

04/19/2010 - Pumped FET within interval 8158-8159 with 974.4 gallons of fresh water

4/30/2010 - Stage 1 Frac within intervals of 8195-8215'

Total: 1000 gal 7.5% HCl Acid;2000 gal 15%HCl Acid; 370,015 gal water;149,500 lbs Mesh;169,400 lbs 40/70 Sand

5/5/2010 - Stage 2 Frac within intervals of 8145-8165'

Total: 1000 gals 15% HCl Acid; 500 gal 28% HCl Acid; 496,077 gals water;199,500 lbs 100 Mesh;299,700 lbs of 40/70 Sand

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			

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Brallier Sandstone & Siltstone	5147	7339
Harrell Shale	7339	7672
Burket Shale	7672	7691
Tully Limestone	7691	7737
Hamilton Shale	7737	8100
Upper Marcellus Shale	8100	8176
Purcell Limestone	8176	8188
Lower Marcellus Shale	8188	8225
Onondaga Limestone	8225	8240
Huntersville Chert	8240	8300

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 10/26/2010
API #: 47-7700554

Farm name: Johnson Operator Well No.: 8015

LOCATION: Elevation: 2053' Quadrangle: Cuzzart 7.5

District: Pleasant County: Preston
Latitude: 39.58844 Feet South of 39 Deg. 35 Min. 18.37 Sec.
Longitude 79.57256 Feet West of 79 Deg. 34 Min. 21.22 Sec.

Company:

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
4 Grandview Circle, Suite 203	20"	60'	60'	Circ to Surface
Canonsburg, PA 15317				
Agent: <u>Shawna C. Yezak</u>	13 3/8"	919'	919'	867.6 Cu.Ft. (723 sx)
Inspector: <u>Bryan Harris</u>				Circ to Surface
Date Permit Issued: <u>04/21/10</u>				
Date Well Work Commenced: <u>08/4/10</u>	9 5/8"	2203'	2203'	880.6 Cu.Ft. (880.6 sx)
Date Well Work Completed: <u>9/6/10</u>				
Verbal Plugging:	5 1/2"	8074'	8074'	617.5 Cu.Ft. (475 sx)
Date Permission granted on:				
Rotary Cable Rig <u>x</u>				
Total Vertical Depth (ft): <u>8089'</u>				
Total Measured Depth (ft):				
Fresh Water Depth (ft.): <u>300'</u>				
Salt Water Depth (ft.): <u>1320'</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>N/A</u>				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Shawna C. Yezak
Signature

10/27/2010
Date

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Operations to perforate, frac or stimulate the well has not commenced, a final report will be submitted upon completion of the well.

Formations Encountered: _____ Top Depth _____ / _____ Bottom Depth
Surface:

Allegheny Formation Sandstone & Shale	0	396
Mauch Chunk Sandstone & Shale	396	822
Little Lime - Limestone	822	893
Big Lime - Limestone	893	979
Big Injun - Sandstone	979	1303
Weir Sandstone	1303	1817
Sunbury Shale	1817	1821
Berea Sandstone	1821	2052
4th Sandstone	2052	2111
Fifth Sandstone	2111	2177
Bayard Sandstone	2177	2309
Elizabeth Sandstone	2309	2463
Warren Shale	2463	2552
Speechley Sandstone & Shale	2552	2665
Balltown Sandstone	2665	2932
Bradford Sandstone	2932	3234
Benson Sandstone	3234	3447
Sandstone & Silt	3447	4792
ELK Sandstone	4792	4966
Brallier Sandstone & Siltstone	4966	7062
Harrell Shale	7062	7407
Burket Shale	7407	7435
Tully Limestone	7435	7460

Perforated Intervals, Fracturing, or Stimulating:

[illegible]

Hamilton Shale	7460	7776	
Upper Marcellus Shale	7776	7861	Gas
Purcell Limestone	7861	7885	
Lower Marcellus Shale	7885	7925	Gas
Onondaga Limestone	7925	7940	
Huntersville Chert	7940	8100	

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 42-87-04689 County Roane District Curtis
Quad Penie / 538 Pad Name _____ Field/Pool Name _____
Farm name Monk Well Number 2010A4-1
Operator (as registered with the OOG) Longhorn Hydrocarbons LLC
Address 3152 Parkway City Pigeon Forge State TN Zip 37863

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing _____ Easting _____
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 1003 GL Type of Well ☒ New ☐ Existing Type of Report ☐ Interim ☒ Final

Permit Type ☐ Deviated ☐ Horizontal ☐ Horizontal 6A ☒ Vertical Depth Type ☐ Deep ☒ Shallow

Type of Operation ☐ Convert ☐ Deepen ☒ Drill ☐ Plug Back ☐ Redrilling ☐ Rework ☐ Stimulate

Well Type ☐ Brine Disposal ☐ CBM ☐ Gas ☒ Oil ☐ Secondary Recovery ☐ Solution Mining ☐ Storage ☒ Other Awaiting

Type of Completion ☒ Single ☐ Multiple Fluids Produced ☐ Brine ☐ Gas ☐ NGL ☐ Oil ☒ Other Awaiting

Drilled with ☒ Cable ☐ Rotary

Drilling Media Surface hole ☐ Air ☐ Mud ☒ Fresh Water Intermediate hole ☐ Air ☐ Mud ☒ Fresh Water ☐ Brine

Production hole ☐ Air ☐ Mud ☒ Fresh Water ☐ Brine

Mud Type(s) and Additive(s)

Soap

Date permit issued 01/24/2011 Date drilling commenced 02/01/2011 Date drilling ceased 02/09/2011

Date completion activities began 02/11/2011 Date completion activities ceased 02/12/2011

Verbal plugging (Y/N) N Date permission granted N/A Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 600ft Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1100ft Void(s) encountered (Y/N) depths N
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

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API 47-87 - 04689 Farm name Monk Well number 2010A4-1

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	14.25	13 3/8	32ft	new	J55-42lbs		Yes Cemented
Surface	9 5/8	9 5/8	800ft	NEW			Yes
Coal							
Intermediate 1	8.75	7"	2000ft	new	J55-23lbs		Yes
Intermediate 2							
Intermediate 3							
Production	6.25	4.5"	2800ft		J55-10.5lbs		Yes
Tubing	2"						
Packer type and depth set		4.5 / 800 feet					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class1	10				ground level	8/WDBR
Surface							
Coal							
Intermediate 1	Class1	230	15.6	1.18	271.4	ground level	8
Intermediate 2							
Intermediate 3							
Production	Class1	350	14.2	1.29	451.5	ground level	12
Tubing							

Drillers TD (ft) 2000 Loggers TD (ft) 2000
Deepest formation penetrated Salt Sand Plug back to (ft) _____
Plug back procedure _____

Kick off depth (ft) _____

Check all wireline logs run ☐ caliper ☒ density ☐ deviated/directional ☐ induction
☒ neutron ☒ resistivity ☒ gamma ray ☒ temperature ☐ sonic

Well cored ☐ Yes ☒ No Conventional Sidewall Were cuttings collected ☐ Yes ☒ No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ☒ No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? ☒ Yes ☐ No DETAILS No Frack Date

WERE TRACERS USED ☐ Yes ☒ No TYPE OF TRACER(S) USED _____

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Well number 2010A4-1

[illegible]

STIMULATION INFORMATION PER STAGE

[illegible]

Please insert additional pages as applicable.

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API 47- 87 - 04689

Farm name Monk

Well number 2010A4-1

PRODUCING FORMATION(S)

DEPTHS

No Frack To Date ~ No Current production TVD _____ MD _____

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☐ Open Flow

OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ Oil _____ NGL _____ Water _____ GAS MEASURED BY
_____ mcfpd _____ bpd _____ bpd _____ bpd ☐ Estimated ☐ Orifice ☐ Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
Red Rock	0	610	0		
Pitts Sand	610	715			
Slate	715	790			
Pitts-Sand	790	830			
late Red Roc	830	1125			
L. Dunkard	1125	1264			
SLate Lime	1265	1350			
Gas Sand	1351	1541			
Slate-sand	1542	1790			
Salt Sand	1791	2000			

Please insert additional pages as applicable.

Drilling Contractor Monroe Drilling

Address 46886 Moore Ridge Rd. City Woodfield State OH Zip 43793

Logging Company Appalachian Well Survey

Address 4973 Skyline Drive City Cambridge State OH Zip 43725

Cementing Company Formation Cement

Address P.O. Box 2667 City Zanesville State OH Zip 43702

Stimulating Company _____

Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Eric Moser

Telephone 865.287.6208

Signature _____ Title Managing Partner Date 09/24/2014

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-87-04690 County Roane District Curtis
Quad Penie / 538 Pad Name _____ Field/Pool Name _____
Farm name Monk Well Number 2010A4-2
Operator (as registered with the OOG) Longhorn Hydrocarbons LLC
Address 3152 Parkway City Pigeon Forge State TN Zip 37863

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing _____ Easting _____
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 941 GL Type of Well ☒ New ☐ Existing Type of Report ☐ Interim ☒ Final
Permit Type ☐ Deviated ☐ Horizontal ☐ Horizontal 6A ☒ Vertical Depth Type ☐ Deep ☒ Shallow
Type of Operation ☐ Convert ☐ Deepen ☒ Drill ☐ Plug Back ☐ Redrilling ☐ Rework ☐ Stimulate
Well Type ☐ Brine Disposal ☐ CBM ☐ Gas ☒ Oil ☐ Secondary Recovery ☐ Solution Mining ☐ Storage ☒ Other Awaiting
Type of Completion ☒ Single ☐ Multiple Fluids Produced ☐ Brine ☐ Gas ☐ NGL ☐ Oil ☒ Other Awaiting
Drilled with ☒ Cable ☐ Rotary

Drilling Media Surface hole ☐ Air ☐ Mud ☒ Fresh Water Intermediate hole ☐ Air ☐ Mud ☒ Fresh Water ☐ Brine
Production hole ☐ Air ☐ Mud ☒ Fresh Water ☐ Brine
Mud Type(s) and Additive(s)
Soap

Date permit issued 02/15/2011 Date drilling commenced 02/17/2011 Date drilling ceased 02/25/2011
Date completion activities began 02/26/2011 Date completion activities ceased 02/27/2011 3:06/11
Verbal plugging (Y/N) N Date permission granted N/A Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 600ft Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1100Ft Void(s) encountered (Y/N) depths N
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

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API 47-87 - 04690

Farm name Monk

Well number 2010A4-3

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	14.25	<u>9 5/8</u>	<u>23 32ft</u>	<u>new</u>	<u>J55-42lbs</u>		<u>Yes Cemented</u>
Surface	<u>8.75</u>	<u>7"</u>	<u>911</u>	<u>New</u>	<u>J55-231lb</u>		<u>Yes</u>
Coal							
Intermediate 1	8.75	7"	2000ft	new	J55-231lb		Yes
Intermediate 2							
Intermediate 3							
Production	<u>6.25</u>	<u>4.5"</u>	<u>2000ft</u>		<u>J55-19.5lb</u>	<u>9.5lb</u>	<u>Yes</u>
Tubing		<u>2 3/8</u>	<u>As Needed</u>				
Packer type and depth set		<u>4.6 / 800 feet</u>					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	<u>Class1</u>	<u>10</u>				<u>ground level</u>	<u>8/WDBR</u>
Surface							
Coal							
Intermediate 1	<u>Class1</u>	<u>230</u>	<u>15.6</u>	<u>1.18</u>	<u>271.4</u>	<u>ground level</u>	<u>8</u>
Intermediate 2							
Intermediate 3							
Production	<u>Class1</u>	<u>350</u>	<u>14.2</u>	<u>1.29</u>	<u>451.5</u>	<u>ground level</u>	<u>12</u>
Tubing							

Drillers TD (ft) 2000

Loggers TD (ft) 2000

Deepest formation penetrated Salt Sand

Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) _____

Check all wireline logs run

☐ caliper

☒ density

☐ deviated/directional

☐ induction

☒ neutron

☒ resistivity

☒ gamma ray

☒ temperature

☐ sonic

Well cored ☐ Yes ☒ No

Conventional

Sidewall

Were cuttings collected ☐ Yes ☒ No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ☒ No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? ☒ Yes ☐ No

DETAILS

No Frack Date

- From info

WERE TRACERS USED ☐ Yes ☒ No TYPE OF TRACER(S) USED _____

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PERFORATION RECORD

Please insert additional pages as applicable.

Complete a separate record for each stimulation stage.

Please insert additional pages as applicable.

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API 47- 87 - 04690

Farm name Monk

Well number 2010A4-2

PRODUCING FORMATION(S)

DEPTHS

No Frack To Date - NO

 TVD MD

Production

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☐ Open Flow

OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface psi Bottom Hole psi DURATION OF TEST hrs

OPEN FLOW Gas mcfpd Oil bpd NGL bpd Water bpd
GAS MEASURED BY ☐ Estimated ☐ Orifice ☐ Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
Red Rock	0	610	0		
Pitts Sand	610	655			
Slate	655	730			
Pitts-Sand	730	770			
late Red Rock	770	965			
L. Dunkard	965	1204			
Slate Lime	1204	1290			
Gas Sand	1290	1481			
Slate-sand	1481	1730			
Salt Sand	1730	1941			

Please insert additional pages as applicable.

Drilling Contractor Monroe Drilling

Address 46886 Moore Ridge Rd. City Woodsfield State OH Zip 43793

Logging Company Appalachian Well Survey

Address 4973 Skyline Drive City Cambridge State OH Zip 43725

Cementing Company Formation Cement

Address P.O. Box 2667 City Zanesville State OH Zip 43702

Stimulating Company Universal Well Services

Address P.O. Box 2437 City Brookhaven State GA Zip 30620

Please insert additional pages as applicable.

Completed by Eric Moser

Telephone 865.287.6208

Signature [Signature] Title Managing Partner Date 09/24/2014

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-87-04691 County Roane District Curtis
Quad Penle / 538 Pad Name _____ Field/Pool Name _____
Farm name Monk Well Number 2010A4-3
Operator (as registered with the OOG) Longhorn Hydrocarbons LLC
Address 3152 Parkway City Pigeon Forge State TN Zip 37863

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing _____ Easting _____
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 983 GL Type of Well ☒ New ☐ Existing Type of Report ☐ Interim ☒ Final

Permit Type ☐ Deviated ☐ Horizontal ☐ Horizontal 6A ☒ Vertical Depth Type ☐ Deep ☒ Shallow

Type of Operation ☐ Convert ☐ Deepen ☒ Drill ☐ Plug Back ☐ Redrilling ☐ Rework ☐ Stimulate

Well Type ☐ Brine Disposal ☐ CBM ☐ Gas ☒ Oil ☐ Secondary Recovery ☐ Solution Mining ☐ Storage ☒ Other Awaiting (

Type of Completion ☒ Single ☐ Multiple Fluids Produced ☐ Brine ☐ Gas ☐ NGL ☐ Oil ☒ Other Awaiting (

Drilled with ☒ Cable ☐ Rotary

Drilling Media Surface hole ☐ Air ☐ Mud ☒ Fresh Water Intermediate hole ☐ Air ☐ Mud ☒ Fresh Water ☐ Brine

Production hole ☐ Air ☐ Mud ☒ Fresh Water ☐ Brine

Mud Type(s) and Additive(s)

Soap

Date permit issued 03/02/2011 Date drilling commenced 03/07/2011 Date drilling ceased 02/09/2011

Date completion activities began 03/21/2011 Date completion activities ceased 03/22/2011

Verbal plugging (Y/N) N Date permission granted N/A Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 600ft Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1100ft Void(s) encountered (Y/N) depths N
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

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API 47-87 - 04691 Farm name Monk Well number 2010A4-2

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	14.25	<u>9 5/8</u>	<u>23 92ft</u>	<u>new</u>	<u>J55-42lbs</u>		<u>Yes Cemented</u>
Surface	<u>8.75</u>	<u>7"</u>	<u>953</u>	<u>New</u>	<u>J55-15.5lb</u>		<u>Yes</u>
Coal							
Intermediate 1	<u>8.75</u>	<u>7"</u>	<u>2000ft</u>	<u>new</u>	<u>J55-23lbs</u>		<u>Yes</u>
Intermediate 2							
Intermediate 3							
Production	<u>6.25</u>	<u>4.5"</u>	<u>2000ft</u>		<u>J55-10.5lbs</u>		<u>Yes</u>
Tubing	<u>2 3/8</u>		<u>As Needed</u>				
Packer type and depth set		<u>4.5 / 800 feet</u>					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	<u>Class1</u>	<u>10</u>				<u>ground level</u>	<u>8/WDBR</u>
Surface							
Coal							
Intermediate 1	<u>Class1</u>	<u>230</u>	<u>15.6</u>	<u>1.18</u>	<u>271.4</u>	<u>ground level</u>	<u>8</u>
Intermediate 2							
Intermediate 3							
Production	<u>Class1</u>	<u>350</u>	<u>14.2</u>	<u>1.29</u>	<u>451.5</u>	<u>ground level</u>	<u>12</u>
Tubing							

Drillers TD (ft) 2000

Loggers TD (ft) 2000

Deepest formation penetrated Salt Sand

Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) _____

Check all wireline logs run

☐ caliper

☒ density

☐ deviated/directional

☐ induction

☒ neutron

☒ resistivity

☒ gamma ray

☒ temperature

☐ sonic

Well cored ☐ Yes ☒ No

Conventional

Sidewall

Were cuttings collected ☐ Yes ☒ No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ☒ No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? ☒ Yes ☐ No DETAILS No Frack Date

WERE TRACERS USED ☐ Yes ☒ No TYPE OF TRACER(S) USED _____

Well number 2010A4-3

[illegible][illegible]

Please insert additional pages as applicable.

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API 47- 87 - 04691

Farm name Monk

Well number 2010A4-3

PRODUCING FORMATION(S)

DEPTHS

No Frack To Date - No

TVD

MD

Production

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☐ Open Flow

OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd
GAS MEASURED BY ☐ Estimated ☐ Orifice ☐ Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
Red Rock	0	610	0		
Pitts Sand	610	695			
Slate	695	770			
Pitts-Sand	770	810			
late Red Roc	810	1105			
L. Dunkard	1105	1244			
Slate Lime	1244	1330			
Gas Sand	1330	1521			
Slate-sand	1521	1770			
Salt Sand	1770	1930			

Please insert additional pages as applicable.

Drilling Contractor Monroe Drilling

Address 48886 Moore Ridge Rd. City Woodsfield State OH Zip 43793

Logging Company Appalachian Well Survey

Address 4973 Skyline Drive City Cambridge State OH Zip 43725

Cementing Company Formation Cement

Address P.O. Box 2667 City Zanesville State OH Zip 43702

Stimulating Company _____

Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Eric Moser

Telephone 865.287.6208

Signature _____ Title Managing Partner Date 09/24/2014

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry